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October 21, 1996

Pat Gochnour
Gochnour & Associates, Inc.
P.O. Box 3207
Englewood, Colorado 80155

Re: Review of Notice of Intention to Commence Large Mining Operations, Summo USA Corporation (Summo), Lisbon Valley Copper Project, M/037/088, (UTU-72499), San Juan County, Utah

Dear Mr. Gochnour:

The Division has completed a review of Summo's Notice of Intent to Commence Large Mining Operations (NOI-LMO) submission received August 23, 1996. The documents received on this date which have been reviewed are: (1) NOI-LMO volume, (2) Appendix A - Proposed Plan of Operations Lisbon Valley Project (August 8, 1995), (3) Appendix B - Draft Environmental Impact Statement Lisbon Valley Copper Project (May 1996), (4) Appendix C - Lisbon Valley Project Heap Leach Facility Design Report (June 1996), and (5) Appendix D - Lisbon Valley Project Utah Groundwater Discharge Permit Application (July 25, 1996). After reviewing this information, the Division has several comments which will need to be responded to prior to issuing tentative approval. The comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion.

R647-4-105 Maps, Drawings & Photographs

105.1 Topographic base map, boundaries, pre-act disturbance

Please include borders identifying the existing disturbances within 500 feet of the proposed project area on Figure 1. This Figure may already show these features; however, it is difficult to discern which disturbances are existing and which are proposed. (AAG)

One of the NOI volumes received by the Division was lacking Figure 3. Please provide us with another copy of this figure.

105.2 Surface facilities map

Figures 4 and 5 do not contain borders clearly defining the proposed project disturbed areas. Please provide borders corresponding to the various categories of disturbances listed on the acreage table on Figure 3. Please provide a detail drawing of the facilities area with a key identifying the various structures. The scale of the facilities drawing should be approximately 1 inch = 500 feet. The main purpose of this drawing is to provide details needed for verification/calculation of the reclamation surety. (AAG)

105.3 Drawings or Cross Sections (slopes, roads, pads, etc.)
Please provide a reclamation treatments map similar in scale to Figures 4 & 5 using the same disturbed area borders requested above. Please color code or hatch the areas according the various reclamation treatments proposed for these areas. For example, roads would be coded to indicate the reclamation treatments of ripping, topsoiling and seeding. The reclamation treatments map would also identify those areas which will be disturbed, but are proposed to receive no reclamation treatments. (AAG)

Please provide a drawing which shows topography after final reclamation. This topography may be included in the Reclamation Treatments Map if appropriate. (AAG)

Please provide cross sectional drawings of the final pit configurations including the typical safety berms around the pits. Please provide a detail drawing of the proposed safety berms. (AAG)

R647-4-106 Operation Plan

106.2 Type of operations conducted, mining method, processing etc.
Will there be a blanket of crushed ore placed for liner protection in the conveyor corridor or will the conveyor be placed directly on the liner? (AAG)

Please describe the contingency plan to handle a pond overflow situation or a controlled release of solutions from the ponds? Does the contingency plan deal with a full pad drain down, due to an extended power outage? If this information is contained in a separate plan or report (Operation and Maintenance Manual?), please provide a copy of this report with your response. (AAG)

Is there any potential for public exposure to the electowinning process where volatilized sulfuric acid may be of a concern. Will the electrowinning circuit be located in a contained/secured area to prevent exposure to the public? (AAG)

The Groundwater Permit Application states seepage to pond sumps exceeding 200 gpd per acre of pond area will result in the pond being drained and the liner repaired. Please provide the Division with a copy of any leakage/seepage reports which are required under the Groundwater Permit by the Division of Water Quality. (AAG)

Table 2-5 of the DEIS lists annual quantities of fuels and reagents needed; however, it does not describe the amount of materials stored on site. Please describe the amounts of various fuels and reagents to be stored on site. Please show the storage tanks or areas on the facilities map requested under R647-4-105.2. This information may be contained in a Spill Prevention Control and Countermeasures Plan. If so, please include a copy of the plan with your response. (AAG)

106.9 Location & size of ore, waste, tailings, ponds
The proposed location of Dump D in the drainage leading to Lisbon Canyon is undesirable to the Division due to the long term impacts of this location. The Division is in favor of the "Facility Layout Alternative" described in the DEIS; however, another alternative which eliminates the location of the dump in a drainage may also be acceptable. Please describe the measures to be taken to minimize the impacts of the locating Dump D within the drainage or describe alternative locations for this waste material. (TM)

R647-4-107 Operation Practices

107.1 Public safety & welfare

107.1.15 Constructing berms, fences, etc. above highwalls
Safety berms/fencing around the pits will need to be in place *during* operations for those pits which are accessible to the public. Also see comments under section R647-4-105.3. (AAG)

107.2 Drainages to minimize damage
Table 10 of the Heap Leach Facility Design Report includes data for 22 diversion ditches. For each ditch this table lists contributing area, peak flow, ditch slope, maximum velocity, channel depth and channel lining. Please provide the following information for each of the diversion ditches:

1. A watershed map showing contributing watershed areas associated with each diversion.

2. Riprap calculations or reference of riprap sizing methodology to verify riprap size and gradation, including filter blanket criteria.

3. Design parameters for the coefficients C, I, A generated to calculate peak flows using the rational method.

4. Typical channel cross section(s) to show constructed channel side slopes and bottom widths.

5. A map showing the exact location of diversions using identification numbers which correspond to numbers used in a revised version of Table. This map will call out the specific reaches of each channel related to the designs in Table 10.

6. A detailed description of all diversion ditches for all waste dump locations, including information to support each ditch design. Include a description of the impacts associated with routing drainage around or off the waste dumps. (TM)

107.3 Erosion control & sediment control
Please describe how erosion will be controlled off of waste dumps and any reclaimed slopes for the long term surface roughness, terracing, tackifiers, etc.). (TM)

107.4 Deleterious material safely stored or removed
The Groundwater Discharge Permit Application states that competition between adsorption of the uranium species uranyl and complexation with bicarbonate and phosphate will determine the fate of uranium in this system. The Groundwater Permit Application later states: "These competing effects cannot be quantified by inspection, but it seems reasonable to expect that uranium attenuation may be limited." Please provide information addressing the issue of accumulation of radio nuclides or uranium species due to the use of groundwater for dust suppression or process waters applied to the heap. This information may already be contained in your Stormwater Permit Application, if so, please provide us with a copy of this information. (AAG)

107.6 Concurrent reclamation
Will portions of the leach pad be rinsed/neutralized during operations prior to final reclamation? This practice may minimize costs during the final years and assist in developing the most cost effective rinse/neutralization procedure. (AAG)

R647-4-109 Impact Assessment

109.1 Impacts to surface & groundwater systems
Please provide the Division with necessary updates to Surface and Ground water monitoring as data becomes available from monitoring wells, etc.(TM)

109.4 Slope stability, erosion control, air quality, safety
Please describe the final configurations for the various pits, i.e. inter bench angles, bench width, bench height, overall angle, elevation of pit floor, and provide comments on the stability of each pit configuration. The cross sections requested under R647-4-105.3 may address the description of the pit configurations. (AAG)

109.5 Actions to mitigate any impacts
Please describe any actions proposed to mitigate the impacts described above.

R647-4-110 Reclamation Plan

110.2 Roads, highwall, slopes, drainages, pits, etc. reclaimed
It is unclear whether the neutralized heap leach materials will be graded off the liner to achieve the overall 2.5:1 slope at final reclamation. Please describe this aspect of final reclamation of the heap. What will happen to the liner in the conveyor corridor and solution ditches at final reclamation? (AAG)

110.3 Description of facilities to be left(post mining use)
The Division is not aware of any facilities which are proposed to remain due to a post mining use. The DEIS includes a statement that the power line *may* remain. Please clarify this statement. Please identify which roads (if any) created or improved by this project are proposed to remain. (AAG)

110.4 Description or treatment/disposition of deleterious or acid forming material
The Division will request SUMMO follow the Waste Rock Selective Handling Alternative as described in the DEIS, unless another alternative for dealing with the potentially acid generating waste can be justified to the Division's satisfaction. (AAG)

110.5 Revegetation planting program
The Division recognizes that the seed mix may need to be altered to meet other agency requirements as determined through the EIS process. The Division will work with these agencies and the operator to determine final seed mixes to be used. The Division encourages the development of vegetation test plots as early as possible to assist in final reclamation plan adjustments. (LK)

R647-4-111 Reclamation Practices

111.1 Public safety & welfare

1.13 Plugging drill holes
What is the long term disposition of monitoring and water wells etc., in regards to plugging and abandonment? (TM)

111.2 Reclamation of natural channels
What will be the long term reclamation plan and design details for the reestablishment of the natural channels in and around the disturbed areas? How will the surface water drainage at the mouth of Lisbon Canyon be protected from being routed into the Sentinel pit? (TM)

111.3 Erosion & sediment control
How will erosion be controlled off of waste dumps and any reclaimed slopes as a part of final reclamation (i.e surface roughness, terracing, tackifiers, etc.)? (TM)

111.4 Removal/neutralization of deleterious material
Please describe the bench scale rinsing studies/tests being undertaken on the heap leach materials (i.e. type of tests, duration of testing, etc.) Please provide the Division with the results of this testing when available. (AAG)

R647-4-112 Variance

Summo has requested a variance from rule R647-4-111.6 - Slopes, as it would relate to open pits. Summo proposes to leave all four pits open at final reclamation. Justification for this is that the optimum mining sequence does not facilitate backfilling of the pits. Consequently, backfilling would require double handling of waste materials. In addition, backfilling would make future development of the resources exposed in the bottom of the pits less economical.

Summo has requested a variance from rule R647-4-111.13 - Revegetation, as it would relate to open pits. Since the pits are not proposed to be backfilled, it would be difficult to achieve a revegetation cover of 70% of the premining cover. Exposed pit walls within the pits are not proposed to be seeded. The berms around the pits and the reclaimed haul roads into the pits will be seeded.

Summo has proposed to install signs, and safety berms or fencing around these pits to mitigate the safety hazard. Since the pits are proposed to be left open, they may also impound water, which implies another variance may also be needed (R647-4-111.9 - Dams & Impoundments).

There is no mitigation currently proposed to deal with the possibility of impounded pit water. Computer modeling has provided some prediction of the quality of the pit water; however, the complex geology of the region reduces the reliability of these predictions. Partial backfilling of the pits above the water level may mitigate the impacts due to poor quality of pit water; however, this may significantly affect the economics of the operation. It is unclear if any of the pit highwalls will remain at angles steeper than 45 degrees at the time of final reclamation (R647-4-111.7 - Highwalls). The cross sections requested under section R647-4-105.3 will clarify the highwall configurations.

The Division will consider granting variances which: (1) allow pit highwalls to remain steeper than 45 degrees, (2) allow pits to impound water, and (3) allow pits to be excluded from the revegetation success standard which may exclude pits from receiving any revegetation treatments (with the exception of haul roads into the pits) ***after*** the additional information requested in this review letter has been provided. (AAG)

R647-4-113 Surety

The Division will coordinate with the BLM and School Institutional Trust Lands Administration to avoid duplication of reclamation surety. One form and amount of reclamation surety acceptable to all three agencies will be pursued.

The amount of reclamation surety estimated in this submission is $3,367,742. Using a total disturbed area of 1,103 acres, this figures provides an average of $3,053/acre. The Division cannot verify this surety amount until the additional drawings and information requested in this review letter have been provided. In addition, there are a number of items in the surety estimate which require some additional clarification. These items are listed below.

•Where are the line items describing the placement of 12 inches of soil material on each of the dumps? The volumes shown under the quantity column of the estimate do not match up with a volume calculated using the total dump acreage multiplied by one (1) foot of soil. Please explain how the volumes and square footage on pages one and two of the estimate were arrived at.

•Please provide an acreage breakdown for the surface roads and pit haul roads.

•Please explain the lack of a line item for demolition and clean up of surface facilities in this estimate.

•Was seeding the acreage associated with the topsoil stockpiles included in one of the line items?

•Please explain how the amount shown as a contingency was calculated in the estimate.

•Please be advised that the Division has been directed by the Board of Oil, Gas and Mining to escalate surety estimates for five years into the future. The current escalation factor used by the Division is 2.58%. Please include five years of escalation in the surety estimate (year 2001 dollars). (AAG)

The Division is not prepared to issue a tentative approval for the Summo NOI-LMO at this time. We will suspend our review until your response to this letter is received. Please be advised that after reaching tentative approval, the Division must initiate a 30-day public comment period. After the end of the public comment period, the Division will present the amount and form of reclamation surety to the Board of Oil, Gas and Mining for approval at one of their regularly scheduled monthly hearings. Final approval would be issued by the Division after the Board accepts the reclamation surety.

If you have any questions regarding this letter please contact me or the other member of the Minerals staff (Tony Gallegos, Lynn Kunzler, Tom Munson).

Sincerely,

D. Wayne Hedberg

D. Wayne Hedberg
Permit Supervisor
Minerals Regulatory Program

jb
cc: Robert Prescott, Summo, Moab
Lynn Jackson, BLM Moab District
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